

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

"PROJECT" EMISSIONS REDUCTIONS

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	Emissions Change (Tons Per Year)						Additional Comments	Estimated Project Completion Date
				NOx	SOx	CO	PM-10	TSP	H2SO4		
FCCU Shutdown (W)	TBD / 2017	Shutdown the FCCU/associated heaters at the Wilmington Refinery.	No	(81.18)	(69.72)	(55.05)	(30.20)	(30.20)	(0.01)	2012/2013 actual emissions (2011/2012 for PM).	Jul 2017
CO Boiler Shutdown (W)	569408 / 10/1/2014	Shutdown COB at the Wilmington Refinery. Excludes PM ERCs applied for by the facility.	No	(23.32)	(6.27)	(120.11)	(0.21)	(0.21)	(1.23)	2012/2013 actual emissions (2011/2012 for PM). Excludes PM ERCs applied for by the facility.	Contemporaneous Project
Coker Venting (C)	No 2 Coker: 571390 / 2016 No. 1 Coker: 582817 / 2016	Installation of piping, eductors and instrumentation to keep drum cycle times the same while reducing release pressure to 2 psia.	No	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Rule 1114 emissions decrease project. Reductions conservatively excluded from the analysis.	Contemporaneous Project
HC Unit Heater Duty Bump H-300 and H-301 (W)	Not yet submitted	Increase the maximum rated capacity of the heater. Conversion to ULNB, natural gas and upgrades to the SCR.	No	(0.10)	(0.19)	-	-	-	-	Actual to Potential emissions evaluation.	Jul 2017
Subtotal:				(104.60)	(76.18)	(175.16)	(30.41)	(30.41)	(1.24)		

"CONTEMPORANEOUS EMISSIONS" (LARC 5 YEAR LOOKBACK)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	Emissions Change (Tons Per Year)						Additional Comments	Estimated Project Completion Date
				NOx	SOx	CO	PM-10	TSP	H2SO4		
Storage Tanks - ETN 10172	553189 / 2013	D599: Permit existing Tank 913 (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Alky Acid Neutralizing Pits - ETN 10192	553179 / 2013	P09S01: Permit 2 existing acid neutralization pits (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Alky Acid Neutralizing Pits - ETN 10192	553188 / 2013	P09S01: Permit 1 of the 2 existing acid neutralization pits (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Fire Training Yard Collection Sump	497452 / 2009	D2902: Install a new fire training yard sump to replace D2749, which was removed	Yes	-	-	-	-	-	-	Installed mid 2011.	Contemporaneous Project
Ammonia Storage Tank PO No PC Application RPV 3037, 3230	553186 / 2013	Application to permit existing anhydrous ammonia tank (PO no PC application)	No	-	-	-	-	-	-	List existing unit in the permit; no change in emissions.	Contemporaneous Project
Groundwater Recovery System Permitting	510406 / 2010	Application to permit existing groundwater extraction/remediation wells and associated fugitive components (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Butane Metering Skid	553174 / 2013	P21S04: Permit the existing connection of thermal relief valves located in the pressurized tank area to the VRS (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Butane Metering Skid	553187 / 2013	D2591: Permit the existing connection of thermal relief valves located in the pressurized tank area to the VRS (PO no PC application)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Maintenance Building Sump	528138 / 2011	D2749/C2910: Convert the existing fire training yard sump to the new maintenance building sump and install carbon adsorption	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FCCU Multi Loader (P3, S4)	TBD / 2015	P3S4: Permit the Multi-Loader to inject catalyst into the FCCU Regenerator. This multi-loader will take the place of the existing AutoCat Loader and Shot Pot Loaders which will now only serve as a backup. Application has not yet been submitted (4/10/2014). No change in emissions will occur.	No	-	-	-	-	-	-	Replacement to existing units. Existing units will serve as backup. No change to the emissions rates.	Contemporaneous Project
FCCU AutoCat Loader (P3, S4)	563611 / 2014	P3S4: Permit the existing AutoCat Loader which injects catalyst into the FCCU Regenerator (PO no PC application). Permit application for existing unit that was installed much prior to the PSD 5-year lookback period. No increase in emissions.	No	-	-	-	-	-	-	Permit for existing unit installed prior to PSD 5-year lookback period. No change to emissions rate.	Contemporaneous Project
Remediation - Soil Vapor Extraction	573558 / 2015	Installation of a thermal oxidizer to combust gases extracted from soil.	No	1.28	0.88	0.61	0.05	0.05	-	Conservatively high NOx estimate as PTC has not yet been approved.	Contemporaneous Project
Spent Acid Load Rack	568916 / 2014	Application to permit existing spent acid load rack	Yes	-	-	-	-	-	-	Permit for existing unit installed prior to PSD 5-year lookback period. No change to emissions rate.	Contemporaneous Project
Subtotal:				1.28	0.88	0.61	0.05	0.05	-		

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	Emissions Change (Tons Per Year)						Additional Comments	Estimated Project Completion Date
				NOx	SOx	CO	PM-10	TSP	H2SO4		

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4	Additional Comments	Estimated Project Completion Date
Storage Tanks - ETN 10172	553185 / 2013	D1081: List Tank No. 44 as fixed roof tank <u>not</u> venting to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Coker Gas Fractionator Dehex Feed Surge Drum Replacement Project	504383 / 2009	P04S07: Installation of a replacement feed surge drum for RPV 1642 (D1981) and connection of PSV located on the new feed surge drum to the #5 flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank Applications - ETN 10198	553184 / 2013	D1128: List Tank 157 as venting to VRS; authorize storage of spent caustic	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Title V Equipment Review Permit Applications (ETN 10236)	553180 / 2013	P11S01: List tank D739 (RPV 2940, gasoline blending unit) as venting to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
OLD/SR MACT Applicability (2nd Attempt) - ETN 10286	553169 / 2013	P21S04: Connection/removal of VRS connections for BP A/Ns 408305, 415663, and 408330 (Tanks 44, 157, and 913).	Yes	-	-	-	-	-	-	None	Contemporaneous Project
UOP Merox Venting Conditions Permit Application	553173 / 2013	P21S04: Tie in Merox Treating Unit to the VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
UOP Merox Venting Conditions Permit Application	553181 / 2013	P12S08: Tie in Merox Treating Unit to the VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Alkyl Merox Foul Air Connection to Vapor Recovery	543210 / 2012	P09S09: Inactivation of several devices in Iso-Octene unit	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Alkyl Merox Foul Air Connection to Vapor Recovery	553177 / 2013	P09S01: Tie in foul air knock out pot to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Title V Clean Up Project - Priority 2 Items	553165 / 2013	P09S01: Correct venting conditions of RPV 0211 (D635) to remove requirement to vent to amine system, as tank stores naphtha and is connected to VRS, blanketed with RFG; move to P16S01	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Hydrocracker Optimization Water Wash	501042 / 2009	P08S01: Increase straight run diesel feed rate, and upgrade HCU water wash system.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Hydrocracker PSV Upgrade Project & HP LP Interface Project	502189 / 2009	P08S01: Tie-in of several devices to the HC flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Hydrocracker PSV Upgrade Project & HP LP Interface Project	502190 / 2009	P08S02: Tie-in of several devices to the HC flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Hydrocracker PSV Upgrade Project & HP LP Interface Project	502191 / 2009	P21S03: Tie-in of several devices to the HC flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	501002 / 2009	P06S03: Lube oil reservoir and compressor PRDs connected to vapor control	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	501003 / 2009	P06S01: Lube oil reservoir and compressor PRDs connected to vapor control	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	501004 / 2009	P06S02: Lube oil reservoir and compressor PRDs connected to vapor control	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	501005 / 2009	P21S04: Lube oil reservoir and compressor PRDs connected to vapor control	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	501006 / 2009	P21S11: Lube oil reservoir and compressor PRDs connected to vapor control	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	504559 / 2009	P06S01: CRU #1 Lube oil reservoir connected to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	504560 / 2009	P06S02: CRU #2 Lube oil reservoir connected to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Reformer Compressors - Gas Recovery System Permitting	506084 / 2009	P21S04: Lube oil reservoir connected to VRS	Yes	-	-	-	-	-	-	None	Contemporaneous Project
No. 2/3 Naphtha Splitter Feed Surge Drum PSV, 55PSV5008	501926 / 2009	P04S02: Connection of #2/#3 Naphtha Splitter Surge Drum (RPV-1241) at SFIA to coker flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Coker Gas Fractionator Dehex Feed Surge Drum Replacement Project	504384 / 2009	P21S06: Tie-in of PSV associated with replacement to feed surge drum for RPV 1642 (D1981) to the #5 flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
LED Feed Flash Drum Project	511727 / 2010	P21S03: Connect 27PSV5031 on the LED feed flash drum (RPV 3172, D297) to the Hydrocracker Flare (P21S03), install level instrumentation on the LED feed flash drum, and modify instrumentation on the LED tower (RPV 3170, D293) and LED feed flash drum	Yes	-	-	-	-	-	-	None	Contemporaneous Project
LED Feed Flash Drum Project	511728 / 2010	P04S03: Connect 27PSV5031 on the LED feed flash drum (RPV 3172, D297) to the Hydrocracker Flare (P21S03), install level instrumentation on the LED feed flash drum, and modify instrumentation on the LED tower (RPV 3170, D293) and LED feed flash drum	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Ammonia Storage Tank PO No PC Application RPV 3037, 3230	553175 / 2013	D1986: Application to move existing Anhydrous Ammonia Tank from P04S07 to P16S03	No	-	-	-	-	-	-	Administrative change to the permit; no change in emissions.	Contemporaneous Project
SFIA Phase IIA LOM - Batch 1	512088 / 2010	P21S01: Connect PSVs associated with RPV-1073 (D270), RPV-1181 (D272), and RPV-1213 (D282) to the South Area Flare System (P21S01)	Yes	-	-	-	-	-	-	None	Contemporaneous Project

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4	Additional Comments	Estimated Project Completion Date
SFIA Phase IIA LOM - Batch 1	512089 / 2010	P04S01: Connect PSVs associated with RPV-1073 (D270), RPV-1181 (D272), and RPV-1213 (D282) to the South Area Flare System (P21S01)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
SFIA Phase IIA LOM - Batch 2	515390 / 2010	P04S01: Connect PSVs associated with D264 and D268 to the South Area Flare System (P21S01)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
SFIA Phase IIA LOM - Batch 2	515465 / 2010	P21S01: Connect PSVs associated with D264 and D268 to the South Area Flare System (P21S01)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 14 Project	513832 / 2010	D1150: Add gas oil and untreated wastewater to the list of allowable materials stored in this tank	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 710 'Change of Permit Condition' Project	519284 / 2011	P12S14: Correct conditions E336.9 and E336.10 to allow venting to the coker low line at pressures <2 psia	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FCCU Start-up/Shutdown Heater	542863 / 2012	D2837: Add a condition indicating the RECLAIM emission factor to use while operating in refractory dry-out mode	No	-	-	-	-	-	-	Administrative change to the permit; no change in emissions.	Contemporaneous Project
#1 Coker Overhead Accumulator New PSV Connection to Flare Project	527741 / 2011	P02S01: Tie in a new PSV from the #1 Coker Overhead Accumulator to the Coker Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
#1 Coker Overhead Accumulator New PSV Connection to Flare Project	527742 / 2011	P21S01: Tie in a new PSV from the #1 Coker Overhead Accumulator to the Coker Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Hydrocracker R1 Heater Mass Emissions Limit	553164 / 2013	D625: Change condition to remove mass emissions limit erroneously imposed by Conditions A63.28 and D29.3.	No	-	-	-	-	-	-	Change of condition to remove erroneous limit placed on the heater. No change in emissions.	Contemporaneous Project
3 Reformer Fractionator - Dehexanizer Mode	535604 / 2012	P06S03: List #3 Reformer Fractionator Column (RPV 2845, D509) in either dehexanizer mode or deisopentanizer mode	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 394 (D1143) Throughput Limit Increase	539146 / 2012	D1143: Increase tank throughput	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 173R (D2612) Throughput Increase	553167 / 2013	D2612: Increase tank throughput	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Mid-Barrel - Connect 19PSV5045 and 19PSV5047 to Flare	553163 / 2013	P05S02: Connect PRDs (19PSV5045 & 19PSV5047) to Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Mid-Barrel - Connect 19PSV5045 and 19PSV5047 to Flare	553168 / 2013	P21S02: Connect PRDs (19PSV5045 & 19PSV5047) to Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank Modification (2013; Tanks 33 and 34)	557871 / 2013	D1159: Increase allowable throughput and install secondary seals on Tank 33	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank Modification (2013; Tanks 33 and 34)	557872 / 2013	D1160: Increase allowable throughput and install secondary seals on Tank 34	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FFHDS Amine System PSV Tie-In to Flare (2013)	558541 / 2013	P05S03: Connect PSVs 23PSV5542, 23PSV5543, and 23PSV5544 to the FFHDS Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FFHDS Amine System PSV Tie-In to Flare (2013)	558542 / 2013	P21S05: Connect PSVs 23PSV5542, 23PSV5543, and 23PSV5544 to the FFHDS Flare	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 26 - Allow Middle Distillate Storage	561258 / 2013	D1121: Allow middle distillate storage in Tank 26	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Abrasive Blast Cabinet (D2149)	563929 / 2014	D2149: Permit the use of additional blast media. No change to emissions.	No	-	-	-	-	-	-	None	Contemporaneous Project
Coker Rule 1114 compliance project and bottoms heads valve project.	571390 / 2015	P2S2: Installation of piping, eductors, and instrumentation to keep drum cycle times the same while reducing the release pressure to 2 psia. Also the installation of remotely operated valves to open the bottoms heads (improves worker safety).	No	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Emissions Decrease	Rule 1114 emissions decrease project. Emissions decrease conservatively excluded from the analysis.	Contemporaneous Project
LPG Recovery Unit PSV Tie-In	568963 / 2014	P10S2: Installation of a new PSV and tie-in to the flare system. No increase in capacity or throughput.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Other Misc storage tanks	TBD / 2015	Miscellaneous storage tank permit applications.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Midbarrel Stabilizer Reboiler Heater #18 NOx Control Research Permit	TBD / 2015	Install new NOx control technology on heater.	No	Emissions Decrease	-	-	-	-	-	NOx reduction project. No change in PTE. Emissions decrease conservatively excluded from the analysis.	Contemporaneous Project
Coke Barn Load Rate Increase	553162 / 2015	Change to permit condition to allow increased loading at the load rack.	No	-	-	-	0.04	0.04	-	None	Contemporaneous Project
Coker blowdown system (basket strainer)	TBD / 2015	List the existing basket strainer in the permit.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 956	573556 / 2015	Install a steam coil to heat the tank.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Change of Metering Condition on Emergency IC Engines	569765, 569766 569767 / 2014	Change of monitoring condition only; no change in emissions.	No	NA	NA	NA	NA	NA	NA	Change of monitoring condition only; no change in emissions.	Contemporaneous Project

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4	Additional Comments	Estimated Project Completion Date
Change of condition for #52, Vac, #2 Coker, #2 Reformer, #1 Desulfurizer, HC R2, HC Fractionator Heaters	568900, 568901, 568902, 568903, 568904, 568905, 568906 / 2014	Correction of conditions only. No change in emissions.	No	NA	NA	NA	NA	NA	NA	Correction of conditions only. No change in emissions.	Contemporaneous Project
SRP Incinerator Change of Condition	568897, 568898 / 2014	Change of monitoring condition only; no change in emissions.	No	NA	NA	NA	NA	NA	NA	Change of monitoring condition only; no change in emissions.	Contemporaneous Project
Dehexanizer Unit Mods	TBD / Future Project	Modifications to dehexanizer unit.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 277	566352 / 2015	Correction of permit to show connection of tank to the vapor recovery system.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Other misc VOC only projects.	TBD / Future Project	Miscellaneous refinery unit permit applications not affecting pollutants other than VOC.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Subtotal:				-	-	-	0.04	0.04	-		

"CONTEMPORANEOUS EMISSIONS" (LARW 5 YEAR LOOKBACK)

New Sources				Emissions Change (Tons Per Year)						Additional Comments	Estimated Project Completion Date
Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4		
Install Eng 80 (at Tk 55000) Firewater ICE - new - JDClarke 575 hp	520668 / 2011	Install Eng 80 (at Tk 55000) Firewater ICE - new - JDClarke 575 hp	No	0.35	0.02	0.07	0.01	0.01	-	Replacement of older firewater pump engines. PTEs of new units conservatively used in the PSD analysis.	Contemporaneous Project
Install Eng 81 (at Tk 55000) Firewater ICE - new - JDClarke 575 hp	520669 / 2011	Install Eng 81 (at Tk 55000) Firewater ICE - new - JDClarke 575 hp	No	0.35	0.02	0.07	0.01	0.01	-	Replacement of older firewater pump engines. PTEs of new units conservatively used in the PSD analysis.	Contemporaneous Project
Install Eng 83 Firewater ICE - new - JDClarke 575 hp	520670 / 2011	Install Eng 83 Firewater ICE - new - JDClarke 575 hp	No	0.35	0.02	0.07	0.01	0.01	-	Replacement of older firewater pump engines. PTEs of new units conservatively used in the PSD analysis.	Contemporaneous Project
DCU - Construct New VAC Tower - identical replacement of existing	526722 / 2011	DCU - Construct New VAC Tower - identical replacement of existing	Yes	-	-	-	-	-	-	Vac Tower replacement only; no installation of new or modification to existing heaters.	Contemporaneous Project
Construct Storage Tank 80009 - stormwater storage tank	535086 / 2012	Construct Storage Tank 80009 - stormwater storage tank	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Demolish Tank 80035 - Construct Tank 300035	545646 / 2012	Demolish Tank 80035 - Construct Tank 300035	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Demolish Tank 80036 - Construct Tank 300036	545745 / 2012	Demolish Tank 80036 - Construct Tank 300036	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Goodway Power Washer. Application cancelled.	549516 / 2013	Goodway Power Washer. Application cancelled.	NA	NA	NA	NA	NA	NA	-	NA	Contemporaneous Project
Karcher Power Washer. Application cancelled.	549518 / 2013	Karcher Power Washer. Application cancelled.	NA	NA	NA	NA	NA	NA	-	NA	Contemporaneous Project
Abrasive Blast Cabinet	TBD / 2013	Permit existing abrasive blast cabinet near machine shop.	No	-	-	-	0.01	0.01	-	None	Contemporaneous Project
Subtotal:				1.06	0.06	0.22	0.04	0.04	-		

Modified Sources				Emissions Change (Tons Per Year)						Additional Comments	Estimated Project Completion Date
Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4		
Refinery Flare System	551270 / 2013	Refinery Flare System	Yes	-	-	-	-	-	-	None	Contemporaneous Project
HTU3 Clay filter and particulate filter (Crude Pre-Flash Tower Project)	562262, 562263 / 2014	HTU3 Clay filter and particulate filter (Crude Pre-Flash Tower Project). PRV tie-in to flare.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Water Wash System (DCU)	501288 / 2009	Water Wash System (DCU)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 80075 - convert to internal floater	509883 / 2010	Tank 80075 - convert to internal floater	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 80071 - convert to internal floater	509887 / 2010	Tank 80071 - convert to internal floater	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 80072 (cancel 80085 - replace with 80072) convert from fixed roof to internal floater	515442 / 2010	Tank 80072 (cancel 80085 - replace with 80072) convert from fixed roof to internal floater	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 80045 - Conversion of fixed roof to internal floating roof	518304 / 2011	Tank 80045 - Conversion of fixed roof to internal floating roof	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Caustic Tank - Connect to Vapor Recovery	519203 / 2011	Caustic Tank - Connect to Vapor Recovery	Yes	-	-	-	-	-	-	None	Contemporaneous Project

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4	Additional Comments	Estimated Project Completion Date
Connect Caustic/Spent Caustic Tank 192 to VR	519205 / 2011	Connect Caustic/Spent Caustic Tank 192 to VR	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Connect Caustic/Spent Caustic Tank 138 to VR	519207 / 2011	Connect Caustic/Spent Caustic Tank 138 to VR	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Connect Caustic/Spent Caustic Tank 139 to VR	519208 / 2011	Connect Caustic/Spent Caustic Tank 139 to VR	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Connect Caustic/Spent Caustic Tank 200A to VR	519209 / 2011	Connect Caustic/Spent Caustic Tank 200A to VR	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Caustic Tank - Connect to Vapor Recovery	519210 / 2011	Caustic Tank - Connect to Vapor Recovery	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Coke Handling - Belt/screen removal and replacement project. No emissions increase.	519994 / 2011	Coke Handling - Belt/screen removal and replacement project. No emissions increase.	No	-	-	-	-	-	-	Belt/screen removal and replacement project. No emissions increase.	Contemporaneous Project
Tank 80009 - Pond 8/9 Stormwater. Application cancelled.	520256 / 2011	Tank 80009 - Pond 8/9 Stormwater. Application cancelled.	NA	NA	NA	NA	NA	NA	NA	NA	Contemporaneous Project
DCU Blowdown Project	520770 / 2011	DCU Blowdown Project	Yes	-	-	-	-	-	-	None	Contemporaneous Project
HCOD System - Route DAF Exhaust to Vapor Recovery System	524237 / 2011	HCOD System - Route DAF Exhaust to Vapor Recovery System	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Vapor Recovery System - Alter by addition of DAF	524238 / 2011	Vapor Recovery System - Alter by addition of DAF	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 80061 (conversion to internal floater)	529876 / 2011	Storage Tank 80061 (conversion to internal floater)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 80057 (conversion to internal floater)	529905 / 2011	Storage Tank 80057 (conversion to internal floater)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 80082 (conversion to internal floater)	529992 / 2011	Storage Tank 80082 (conversion to internal floater)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Connect Storage Tank 742 to VR (spent caustic storage tank)	530223 / 2011	Connect Storage Tank 742 to VR (spent caustic storage tank)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
VR System to receive Tank 742	530224 / 2011	VR System to receive Tank 742	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank 80064 - add storage of Transmix	532207 / 2012	Storage Tank 80064 - add storage of Transmix	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FCCU V-410 Identical Replacement	535089 / 2012	FCCU V-410 Identical Replacement	Yes	-	-	-	-	-	-	None	Contemporaneous Project
LAR Admin Change Splitter Tower V-407. Application cancelled.	541993 / 2012	LAR Admin Change Splitter Tower V-407. Application cancelled.	NA	NA	NA	NA	NA	NA	NA	NA	Contemporaneous Project
SRP Admin Condition Change for D232.1 - Analyzer Monitoring 60.105(a)(7) to (a)(6) for D51 and D52	542099 / 2012	SRP Admin Condition Change for D232.1 - Analyzer Monitoring 60.105(a)(7) to (a)(6) for D51 and D52	NA	NA	NA	NA	NA	NA	NA	NA	Contemporaneous Project
Tank 80072 - Increase Throughput from 500,000 to 600,000 bbl/mo and change product storage slate to same as Tank 80071 (light crude oil 7.5 psia)	544561 / 2012	Tank 80072 - Increase Throughput from 500,000 to 600,000 bbl/mo and change product storage slate to same as Tank 80071 (light crude oil 7.5 psia)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Flare System Refinery - Alkylation Unit Coalescer	551269 / 2013	Flare System Refinery - Alkylation Unit Coalescer	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Two Position Propane Truck Loading (vapor return line)	553835 / 2013	Two Position Propane Truck Loading (vapor return line)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Connect Tank 80038 to vapor recovery and change material stored to HCU charge	554668 / 2013	Connect Tank 80038 to vapor recovery and change material stored to HCU charge	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Vapor recovery system to accept vapors from Tank 80038	554669 / 2013	Vapor recovery system to accept vapors from Tank 80038	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Tank 80079 increase throughput from 350,000 bbl/mo to 500,000 bbl/mo	556835 / 2013	Tank 80079 increase throughput from 350,000 bbl/mo to 500,000 bbl/mo	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Storage Tank - Tank 107 - increase throughput (stripped sour water)	559086 / 2013	Storage Tank - Tank 107 - increase throughput (stripped sour water)	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Other Misc storage tanks	TBD / 2015	Miscellaneous storage tank permit applications.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
SRP Spare Vapor Recovery Compressor C-196	Pending / 2013	SRP Spare Vapor Recovery Compressor C-196	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Acid Rack Vessel Installation	564031 / 2015	Installation of a vessel to collect acid from drain lines.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
FCCU ESP Gas Flow Monitors	562120 / 2014	Change of condition application; no change in emissions.	NA	NA	NA	NA	NA	NA	NA	Change of condition only. No change in emissions.	Contemporaneous Project
Underground Storage Tank Modifications.	565801, 565802 / 2015	Modification to USTs to comply with Rule 461.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
SRP 300 Converter Replacement	TBD / Future Project	Replace converter at SRP 300. No change in emissions.	No	-	-	-	-	-	-	None	Contemporaneous Project
SRP DEA Filtration System	TBD / Future Project	Installation of a DEA filtration system.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
DCU H-100 Heater Duty Bump (W)	567439 / 2014	Increase the maximum rated capacity of the heater. Maintain existing PTEs.	No	6.12	35.38	3.63	1.21	1.21	1.93	Actual to Potential emissions evaluation.	Contemporaneous Project
Heaters H-41, H-42 and H-43	TBD / 2015	Change of condition application; no change in emissions.	NA	NA	NA	NA	NA	NA	NA	Change of condition only. No change in emissions.	Contemporaneous Project

Tesoro Los Angeles Refinery Integration and Compliance Project
Attachment B: PSD Significant Net Emissions Increase Calculations (Step 2)

Project Name	Application #/ Year Submitted	Project Description	VOC Only Project?	NOx	SOx	CO	PM-10	TSP	H2SO4	Additional Comments	Estimated Project Completion Date
Other misc VOC only projects.	TBD / Future Project	Miscellaneous refinery unit permit applications not affecting pollutants other than VOC.	Yes	-	-	-	-	-	-	None	Contemporaneous Project
Subtotal:				6.12	35.38	3.63	1.21	1.21	1.93		

Notes

- 1) Estimated project completion date is based on the schedule provided in the Environmental Impact Report.
- 2) Several permit applications for "contemporaneous projects" were submitted before the contemporaneous period. These projects were included in the analysis as SCAQMD permits to construct and actual construction may have occurred during the contemporaneous period.

Emissions Change (Tons Per Year) - Alternate Analysis (Excluding FCCU/Pre-Heater COA)						
NOx	SOx	CO	PM-10	TSP	H2SO4	
61.7	54.0	94.6	43.8	43.8	3.7	Project Emissions Increases (Step 1):
(96.1)	(39.9)	(170.7)	(29.1)	(29.1)	0.7	Contemporaneous Project Emissions and Emissions Decreases (Step 2):
(34.4)	14.2	(76.1)	14.7	14.7	4.4	Total Emissions:
40.0	40.0	100.0	15.0	25.0	7.0	PSD Threshold:
No	No	No	No	No	No	Exceeds Threshold:

Emissions Change (Tons Per Year) - Demand Growth Analysis (Including FCCU/Pre-Heater COA)						
NOx	SOx	CO	PM-10	TSP	H2SO4	
56.8	22.2	73.7	27.3	27.3	3.2	Project Emissions Increases (Step 1):
(96.1)	(39.9)	(170.7)	(29.1)	(29.1)	0.7	Contemporaneous Project Emissions and Emissions Decreases (Step 2):
(39.3)	(17.7)	(97.0)	(1.7)	(1.7)	3.9	Total Emissions:
40.0	40.0	100.0	15.0	25.0	7.0	PSD Threshold:
No	No	No	No	No	No	Exceeds Threshold: